

**BEFORE THE DEPARTMENT OF
NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA**

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APPLICATION FOR BENEFICIAL WATER USE PERMIT NO. 41S 30114604 BY DAN & LAURA BOYCE)))	PRELIMINARY DETERMINATION TO GRANT PERMIT
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On January 19, 2018, Dan and Laura Boyce (Applicants) submitted Application for Beneficial Water Use Permit No. 41S 30114604 to the Lewistown Water Resources Regional Office of the Department of Natural Resources and Conservation (Department or DNRC). The proposed appropriation includes a combined flow rate of 150 gallons per minute and volume of 207.7 acre-feet, from two groundwater wells. The Application was determined to be correct and complete on June 6, 2018. An Environmental Assessment for this Application was completed on July 2, 2018.

INFORMATION

The Department considered the following information submitted by the Applicant, which is contained in the administrative record.

Application as filed:

- Application for Beneficial Water Use Permit, Form 600
- Attachments
- Maps: aerial photos and topographic maps of the proposed points of diversion, places of use, and place of storage; and maps of observation well and area water right locations
- Aquifer Testing Addendum
- Two memorandums from the Department granting variances for select aquifer testing requirements (dated October 5, 2017 and November 15, 2017)
- Well log reports and water analysis reports for the proposed wells and surrounding wells
- Two reports by the Montana Bureau of Mines and Geology:

- Groundwater in Eastern and Central Montana, Memoir No. 2, Eugene S. Perry
- Groundwater Resources of Judith Basin, Montana, Memoir No. 7, Eugene S. Perry
- Final Order, In the Matter of Application for Beneficial Water Use Permit 41S 30005803, by William & Wendy Leininger
- Reports on water use requirements for hops and alfalfa

Information Received after Application Filed

- Email communications with Applicant's consultant, Teresa Olson of Water Matters, Water Right Consulting, LLC.
- Response to the Department's Depletion Report from Willis Weight, PhD, PE Hydrogeologist (one of the Applicant's consultants).

Information within the Department's Possession/Knowledge

- Department's Aquifer Test Report, by Attila Fohnagy
- Department's Depletion Report, by Attila Fohnagy
- Department's Groundwater Permit Application Technical Report (Technical Report).
- U.S. Geological Survey stream flow gauging data for the Judith River (Gauge No. 06114700, Judith River near mouth, near Winifred, MT)
- Water right records.

The Department has fully reviewed and considered the evidence and argument submitted in this Application and preliminarily determines the following pursuant to the Montana Water Use Act (Title 85, chapter 2, part 3, MCA).

PROPOSED APPROPRIATION

FINDINGS OF FACT

1. The Applicants propose to divert groundwater from the Kootenai Aquifer, by means of two wells (well depths are 3,041 feet deep and 2,880 feet deep), from January 1 through December 31, at a combined flow rate of 150 gallons per minute (GPM) and a volume up to

207.7 acre-feet (AF). The wells are located in the NESENE Section 14, T20N, R16E, and SENESW Section 14, T20N, R16E, respectively. The purposes of use include Irrigation of 100.5 acres; Multiple Domestic for four households; Lawn and Garden irrigation for the four households (6 acres total); and Stockwater (19 stock tanks serving 623 animal units). The places of use encompass Sections 1, 11, 13 and 14, T 20N, R16E, and Sections 25 and 35, T21N, R16E, all in Fergus County. Water for irrigation purposes will be stored in a pit with a capacity of 77.7 AF, located in the N2S2 Section 14, T20N, R16E.

2. The two groundwater wells are generally situated on a bench between the Judith River and Wolf Creek. Appropriations from the wells will be 100% consumptive to the geologic formations, and any water that is not consumed by the various purposes is projected to return to an unnamed tributary of Bear Springs Coulee.

3. The proposed appropriation of groundwater is projected by the Department to deplete surface water flows by reducing discharge directly from the source aquifer and/or by reducing seepage upward through the Colorado Group Formation. Depletions will likely be spread over numerous small springs and diffuse seepage over the basin, accumulating to the Judith River downstream of Wolf Creek and the Missouri River.

§ 85-2-311, MCA, BENEFICIAL WATER USE PERMIT CRITERIA

GENERAL CONCLUSIONS OF LAW

4. The Montana Constitution expressly recognizes in relevant part that:

- (1) All existing rights to the use of any waters for any useful or beneficial purpose are hereby recognized and confirmed.
- (2) The use of all water that is now or may hereafter be appropriated for sale, rent, distribution, or other beneficial use . . . shall be held to be a public use.
- (3) All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law.

Mont. Const. Art. IX, §3. While the Montana Constitution recognizes the need to protect senior appropriators, it also recognizes a policy to promote the development and use of the waters of the

state by the public. This policy is further expressly recognized in the water policy adopted by the Legislature codified at § 85-2-102, MCA, which states in relevant part:

(1) Pursuant to Article IX of the Montana constitution, the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided in this chapter. . . .

(3) It is the policy of this state and a purpose of this chapter to encourage the wise use of the state's water resources by making them available for appropriation consistent with this chapter and to provide for the wise utilization, development, and conservation of the waters of the state for the maximum benefit of its people with the least possible degradation of the natural aquatic ecosystems. In pursuit of this policy, the state encourages the development of facilities that store and conserve waters for beneficial use, for the maximization of the use of those waters in Montana . . .

5. Pursuant to § 85-2-302(1), MCA, except as provided in §§ 85-2-306 and 85-2-369, MCA, a person may not appropriate water or commence construction of diversion, impoundment, withdrawal, or related distribution works except by applying for and receiving a permit from the Department. See § 85-2-102(1), MCA. An applicant in a beneficial water use permit proceeding must affirmatively prove all of the applicable criteria in § 85-2-311, MCA. Section § 85-2-311(1) states in relevant part:

... the department shall issue a permit if the applicant proves by a preponderance of evidence that the following criteria are met:

(a) (i) there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate; and

(ii) water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:

(A) identification of physical water availability;

(B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and

(C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

(b) the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. In this subsection (1)(b), adverse effect must be determined based on a consideration of an applicant's plan for the exercise of the permit that demonstrates that the applicant's use of the water will be

controlled so the water right of a prior appropriator will be satisfied;

(c) the proposed means of diversion, construction, and operation of the appropriation works are adequate;

(d) the proposed use of water is a beneficial use;

(e) the applicant has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit;

(f) the water quality of a prior appropriator will not be adversely affected;

(g) the proposed use will be substantially in accordance with the classification of water set for the source of supply pursuant to 75-5-301(1); and

(h) the ability of a discharge permit holder to satisfy effluent limitations of a permit issued in accordance with Title 75, chapter 5, part 4, will not be adversely affected.

(2) The applicant is required to prove that the criteria in subsections (1)(f) through (1)(h) have been met only if a valid objection is filed. A valid objection must contain substantial credible information establishing to the satisfaction of the department that the criteria in subsection (1)(f), (1)(g), or (1)(h), as applicable, may not be met. For the criteria set forth in subsection (1)(g), only the department of environmental quality or a local water quality district established under Title 7, chapter 13, part 45, may file a valid objection.

To meet the preponderance of evidence standard, “the applicant, in addition to other evidence demonstrating that the criteria of subsection (1) have been met, shall submit hydrologic or other evidence, including but not limited to water supply data, field reports, and other information developed by the applicant, the department, the U.S. geological survey, or the U.S. natural resources conservation service and other specific field studies.” § 85-2-311(5), MCA (emphasis added). The determination of whether an application has satisfied the § 85-2-311, MCA criteria is committed to the discretion of the Department. Bostwick Properties, Inc. v. Montana Dept. of Natural Resources and Conservation, 2009 MT 181, ¶ 21. The Department is required grant a permit only if the § 85-2-311, MCA, criteria are proven by the applicant by a preponderance of the evidence. Id. A preponderance of evidence is “more probably than not.” Hohenlohe v. DNRC, 2010 MT 203, ¶¶33, 35.

6. Pursuant to § 85-2-312, MCA, the Department may condition permits as it deems necessary to meet the statutory criteria:

(1) (a) The department may issue a permit for less than the amount of water requested, but may not issue a permit for more water than is requested or than can be beneficially used without waste for the purpose stated in the application. The department may require modification of plans and specifications for the appropriation or related diversion or construction. The department may issue a permit subject to terms, conditions, restrictions, and limitations it considers necessary to satisfy the criteria listed in 85-2-311 and subject to subsection (1)(b), and it may issue temporary or seasonal permits. A permit must be issued subject to existing rights and any final determination of those rights made under this chapter.

E.g., Montana Power Co. v. Carey (1984), 211 Mont. 91, 96, 685 P.2d 336, 339 (requirement to grant applications as applied for, would result in, “uncontrolled development of a valuable natural resource” which “contradicts the spirit and purpose underlying the Water Use Act.”); see also, In the Matter of Application for Beneficial Water Use Permit No. 65779-76M by Barbara L. Sowers (DNRC Final Order 1988)(conditions in stipulations may be included if it further compliance with statutory criteria); In the Matter of Application for Beneficial Water Use Permit No. 42M-80600 and Application for Change of Appropriation Water Right No. 42M-036242 by Donald H. Wyrick (DNRC Final Order 1994); Admin. R. Mont. (ARM) 36.12.207.

7. The Montana Supreme Court further recognized in Matter of Beneficial Water Use Permit Numbers 66459-76L, Ciotti: 64988-G76L, Starnier (1996), 278 Mont. 50, 60-61, 923 P.2d 1073, 1079, 1080, *superseded by legislation on another issue*:

Nothing in that section [85-2-313], however, relieves an applicant of his burden to meet the statutory requirements of § 85-2-311, MCA, before DNRC may issue that provisional permit. Instead of resolving doubts in favor of appropriation, the Montana Water Use Act requires an applicant to make explicit statutory showings that there are unappropriated waters in the source of supply, that the water rights of a prior appropriator will not be adversely affected, and that the proposed use will not unreasonably interfere with a planned use for which water has been reserved.

See also, Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order* (2011). The Supreme Court likewise explained that:

.... unambiguous language of the legislature promotes the understanding that the Water Use Act was designed to protect senior water rights holders from encroachment by junior appropriators adversely affecting those senior rights.

Montana Power Co., 211 Mont. at 97-98, 685 P.2d at 340; see also Mont. Const. art. IX §3(1).

8. An appropriation, diversion, impoundment, use, restraint, or attempted appropriation, diversion, impoundment, use, or restraint contrary to the provisions of § 85-2-311, MCA is invalid. An officer, agent, agency, or employee of the state may not knowingly permit, aid, or assist in any manner an unauthorized appropriation, diversion, impoundment, use, or other restraint. A person or corporation may not, directly or indirectly, personally or through an agent, officer, or employee, attempt to appropriate, divert, impound, use, or otherwise restrain or control waters within the boundaries of this state except in accordance with this § 85-2-311, MCA. § 85-2-311(6), MCA.

9. The Department may take notice of judicially cognizable facts and generally recognized technical or scientific facts within the Department's specialized knowledge, as specifically identified in this document. ARM 36.12.221(4).

Physical Availability **FINDINGS OF FACT**

10. Applicant proposes to divert groundwater from the Second and Third Cat Creek Members of the Kootenai Formation, by means of two wells (well depths are 3,041 feet deep and 2,880 feet deep), from January 1 through December 31, at a combined flow rate of 150 gallons per minute (GPM) and a volume up to 207.7 acre-feet (AF). The wells are located in the NESENE Section 14, T20N, R16E, and SENESW Section 14, T20N, R16E, respectively. Application.

11. *Flow Rate* - Both proposed production wells flow under artesian pressure, one having a shut-in pressure of 73 pounds per square inch (PSI), and the other having a present shut-in pressure of 55 PSI. The shut-in pressure, or shut-in head, represents water levels that rise above land surface 168.63 feet and 126.89 feet, respectively. Aquifer Test Report.

12. In lieu of a 72-hour aquifer test, as specified in ARM 36.12.121, the Department granted a testing variance permitting Applicant to submit results from a 37-hour aquifer test on one of the

wells, and a past, 10-hour drillers test on the second well. An additional aquifer test variance was granted because a nearby well was not available for monitoring during the test, and because the cost of drilling a suitable monitoring well would be prohibitive. Aquifer Test Report; Aquifer Testing Variance Memos.

13. The 37-hour test was conducted on September 8-10, 2017, at an average flow rate of 93 gallons per minute (GPM), stabilizing to 90 GPM after 993 minutes. Water levels and drawdown effects were monitored in three wells located in distance approximately 3,300 feet, 6,768 feet, and 9,400 feet from the pumping well. No drawdown was measured in any of the three monitoring wells during the aquifer test. Maximum drawdown in the pumping well was 168.63 feet below the static shut-in head of 168.63 feet, leaving a water column of 2,961 feet above the top of perforations. Aquifer Test Report.

14. During a drillers test in the year 2000, the second well was allowed to flow at 80 GPM for 10 hours. No change in flow or pressure was recorded on the well log, although, according to the Department's Groundwater Hydrologist, Attila Fohnagy, the water level likely dropped to just above the top of casing. Aquifer Test Report.

15. The combined results of the tests display the wells with a capacity to divert around 170.0 GPM ($90 \text{ GPM} + 80 \text{ GPM} = 170 \text{ GPM}$). However, since the time of the drillers test in 2000, the shut-in pressure has dropped in one of the wells, resulting in a flow rate of 60 GPM. The testing shows that the combination of wells are physically capable of appropriating a flow rate of 150 GPM.

16. *Volume* - Physical groundwater availability was evaluated by calculating groundwater flux through a zone of influence (ZOI) corresponding to the 0.01-foot drawdown contour. Groundwater flux is the rate of discharge or flow of groundwater through a porous or fractured media. Using the Theis (1935) solution, a constant pumping rate of 128.8 GPM for the period of diversion (the average flow rate necessary to appropriate the proposed volume of 207.7 AF over the period of diversion), a transmissivity rate of 184 ft²/day, and a storativity value of 0.00003, a distance-drawdown plot was generated. The 0.01-foot drawdown contour was calculated to extend beyond the aquifer boundaries, and was therefore truncated to a 5-mile radius, which is

consistent with Department analysis of previous deep well applications. A groundwater flux of **366.3 AF/year** through the ZOI was calculated by multiplying the width of the ZOI (52,800 feet) by the aquifer transmissivity (184 ft²/day) and groundwater gradient (0.0045 ft/ft). Aquifer Test Report.

17. The proposed volume for the project is 207.7 AF, and the estimated groundwater flux through the ZOI is 366.3 AF. The Department finds the volume of water proposed for appropriation is physically available.

CONCLUSIONS OF LAW

18. Pursuant to § 85-2-311(1)(a)(i), MCA, an applicant must prove by a preponderance of the evidence that “there is water physically available at the proposed point of diversion in the amount that the applicant seeks to appropriate.”

19. An applicant must prove that at least in some years there is water physically available at the point of diversion in the amount the applicant seeks to appropriate. *In the Matter of Application for Beneficial Water Use Permit No. 72662s76G by John Fee and Don Carlson* (DNRC Final Order 1990); *In the Matter of Application for Beneficial Water Use Permit No. 85184s76F by Wills Cattle Co. and Ed McLean* (DNRC Final Order 1994).

20. The Applicant has proven that water is physically available at the proposed point of diversion in the amount Applicant seeks to appropriate. § 85-2-311(1)(a)(i), MCA. FOF’s 11-17.

Legal Availability:

FINDINGS OF FACT

21. *Groundwater* - The Department calculated the zone-of-influence (extent of the 0.01-foot drawdown contour) of the pumping well to extend 215,000 feet from the proposed wells. Since this contour line extends beyond the aquifer boundaries, the zone-of-influence (ZOI) was truncated to five miles, which is consistent with aquifer boundaries evaluated in a previous permit proceeding from the same aquifer by a neighboring well in 2003 (located less than 2 miles away). File for Permit to Appropriate Water No. 41S 30005803. According to the Department’s database, there are 5 groundwater rights that withdraw water from the Kootenai Formation

within the zone-of-influence. The total volume of water associated with the 5 water rights is 146.04 AF. By comparison, the estimated flux through the zone of influence, or volume of water physically available annually, is 366.3 AF. The Department finds that groundwater is legally available in the amount proposed (207.7 AF). Aquifer Test Report.

22. *Surface Water* - The Department's Groundwater Hydrologist, Attila Folnagy, predicts the proposed use will eventually deplete surface water by reducing discharge directly from the source aquifer and/or by reducing seepage upward through an overlying geologic formation, the Colorado Group. Folnagy's determination is that mapped geologic structures indicate possible connections between the source aquifer and surface waters including the Missouri River, Judith River and Wolf Creek. Numerous fault intersections at the Judith River in the area of its confluence with Wolf Creek, allow Folnagy to predict the effects most likely being spread over numerous small springs and diffuse seepage over the basin, and that the depletion effects will be realized to the Judith River downstream of Wolf Creek and the Missouri River. Folnagy projects that consumptive volume from the proposed uses is 187.1 AF, with the balance (20.6 AF) returning to the Judith River. Depletion Report.

23. Applicants' consultant, Willis Weight, WDW Writing, Consulting and Planning, Inc., expressed his disagreement with the Department's analysis of the hydraulic connection between the proposed groundwater appropriation and surface water in a June 20, 2018 letter. Weight argues that either there is no hydraulic connection, based on the confining nature of the geologic formation overlying the water bearing strata of the wells, or depletions will not materialize to the projected surface water source "within any time scale that matters." He argues that the impacts to surface water are not relevant and should be retracted. Weight disagrees with Folnagy's projection, but he appears to acknowledge that Applicants' wells will capture water that would eventually appear at the surface somewhere and at some point in time. However, he provides no analysis as to where a hydraulic connection may exist. Letter from Willis Weight to Teresa Olson, dated June 20, 2018.

24. The Department is required to analyze potential depletions using the best resources available. This includes a determination of the potentially-affected surface source, and the rate

and timing of depletions (months when depletions would occur after they accumulate to the source). Fohnagy offered no prediction as to when depletions could be realized to the Judith River, but he did provide detailed reasoning and analysis for his conclusions. I find that Fohnagy's Report is more persuasive than Weight's letter, because of its extensive analysis, its reference to published papers, its descriptions of area springs, and its explanation of geologic structures that could provide a pathway for water to flow to the predicted stream reaches. Weight's letter mainly theorizes that the groundwater could not be connected to surface water on a scale that matters. Perhaps more importantly, because Weight's letter lacked details that could result in some other conclusion, it does not change the outcome of the Department's Proposal for Decision. Depletion Report; Letter from Willis Weight to Teresa Olson, dated June 20, 2018.

25. 23 water rights exist on the Judith River, below its confluence with Wolf Creek, to the Missouri river. The combined flow rate of all water rights is 261.9 CFS, although, outside of the irrigation season, from October through mid-April, only water rights totaling about 160 CFS, exist. Following is a table reflecting a comparison of legal demands to physical water availability.

TABLE 1: WATER CALCULATED TO BE PHYSICALLY AVAILABLE IN THE JUDITH RIVER AT THE CONFLUENCE WITH WOLF CREEK MINUS MONTHLY LEGAL DEMANDS DOWNSTREAM TO THE MISSOURI RIVER.

Month	Estimated Physical Availability (CFS)	Existing Legal Demands (CFS)	Physically Available – Existing Legal Demands (CFS)	Estimated Physical Availability (AF)	Existing Legal Demands (AF)	Physically Available – Existing Legal Demands (AF)
January	251.3	160.2	91.1	15452.4	9852.8	5599.7
February	257.3	160.2	97.1	14797.8	9217.1	5580.7
March	473.0	160.2	312.8	29081.2	9852.8	19228.4
April	465.7	161.5	304.2	27664.4	9562.0	18102.3
May	767.1	261.9	505.2	47167.1	15789.2	31377.9
June	835.1	261.9	573.2	49691.9	15269.7	34422.2
July	367.8	261.9	105.9	22615.1	15789.2	6825.9
August	317.8	261.9	55.9	19540.8	15789.2	3751.6
September	363.1	261.9	101.2	21606.0	15269.7	6336.2
October	345.0	160.2	184.8	21210.7	9852.7	11358.0
November	263.3	160.2	103.1	15665.0	9534.9	6130.1
December	235.4	160.2	75.2	14471.7	9852.7	4618.9

The numbers show that the physical supply of surface water exceeds legal demands in all months, in both a flow rate and volume basis. Technical Report.

26. The Department finds the Applicant has proven that water is legally available, throughout the period of appropriation, in the amount requested.

CONCLUSIONS OF LAW

27. Pursuant to § 85-2-311(1)(a), MCA, an applicant must prove by a preponderance of the evidence that:

(ii) water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the department and other evidence provided to the department. Legal availability is determined using an analysis involving the following factors:

- (A) identification of physical water availability;
- (B) identification of existing legal demands on the source of supply throughout the area of potential impact by the proposed use; and
- (C) analysis of the evidence on physical water availability and the existing legal demands, including but not limited to a comparison of the physical water supply at the proposed point of diversion with the existing legal demands on the supply of water.

E.g., ARM 36.12.101 and 36.12.120; Montana Power Co., 211 Mont. 91, 685 P.2d 336 (Permit granted to include only early irrigation season because no water legally available in late irrigation season); In the Matter of Application for Beneficial Water Use Permit No. 81705-g76F by Hanson (DNRC Final Order 1992).

28. It is the applicant's burden to present evidence to prove water can be reasonably considered legally available. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (the legislature set out the criteria (§ 85-2-311, MCA) and placed the burden of proof squarely on the applicant. The Supreme Court has instructed that those burdens are exacting.); see also Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston (1991), 249 Mont. 425, 816 P.2d 1054 (burden of proof on applicant in a change proceeding to prove required criteria); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005) (it is the applicant's burden to produce the required evidence.); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions, LLC* (DNRC Final Order 2007)(permit denied for failure to prove legal availability); see also ARM 36.12.1705.

29. Pursuant to Montana Trout Unlimited v. DNRC, 2006 MT 72, 331 Mont. 483, 133 P.3d 224, the Department recognizes the connectivity between surface water and ground water and the effect of pre-stream capture on surface water. E.g., Wesmont Developers v. DNRC, CDV-2009-823, Montana First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 7-8; *In the Matter of Beneficial Water Use Permit Nos. 41H 30012025 and 41H 30013629 by Utility Solutions LLC* (DNRC Final Order 2006)(mitigation of depletion required), *affirmed*, Faust v. DNRC et al., Cause No. CDV-2006-886, Montana First Judicial District (2008); see also Robert and Marlene Takle v. DNRC et al., Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994) (affirming DNRC denial of Applications for Beneficial Water Use Permit Nos. 76691-76H, 72842-76H, 76692-76H and 76070-76H; underground tributary flow cannot be taken to the detriment of other appropriators including surface appropriators and ground water appropriators must prove unappropriated surface water,

citing Smith v. Duff, 39 Mont. 382, 102 P. 984 (1909), and Perkins v. Kramer, 148 Mont. 355, 423 P.2d 587 (1966)); *In the Matter of Beneficial Water Use Permit No. 80175-s76H by Tintzman* (DNRC Final Order 1993)(prior appropriators on a stream gain right to natural flows of all tributaries in so far as may be necessary to afford the amount of water to which they are entitled, citing Loyning v. Rankin (1946), 118 Mont. 235, 165 P.2d 1006; Granite Ditch Co. v. Anderson (1983), 204 Mont. 10, 662 P.2d 1312; Beaverhead Canal Co. v. Dillon Electric Light & Power Co. (1906), 34 Mont. 135, 85 P. 880); *In the Matter of Beneficial Water Use Permit No. 63997-42M by Joseph F. Crisafulli* (DNRC Final Order 1990)(since there is a relationship between surface flows and the ground water source proposed for appropriation, and since diversion by applicant's well appears to influence surface flows, the ranking of the proposed appropriation in priority must be as against all rights to surface water as well as against all groundwater rights in the drainage.) Because the applicant bears the burden of proof as to legal availability, the applicant must prove that the proposed appropriation will not result in prestream capture or induced infiltration and cannot limit its analysis to ground water. § 85-2-311(a)(ii), MCA. Absent such proof, the applicant must analyze the legal availability of surface water in light of the proposed ground water appropriation. *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 By Utility Solutions LLC* (DNRC Final Order 2007) (permit denied); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009); Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 ; Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12.

30. Where a proposed ground water appropriation depletes surface water, applicant must prove legal availability of amount of depletion of surface water throughout the period of diversion either through a mitigation /aquifer recharge plan to offset depletions or by analysis of the legal demands on, and availability of, water in the surface water source. Robert and Marlene Takle v. DNRC et al., Cause No. DV-92-323, Montana Fourth Judicial District for Ravalli County, *Opinion and Order* (June 23, 1994); *In the Matter of Beneficial Water Use Permit Nos. 41H*

30012025 and 41H 30013629 by *Utility Solutions LLC* (DNRC Final Order 2006)(permits granted), *affirmed*, Faust v. DNRC et al., Cause No. CDV-2006-886, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit 41H 30019215 by Utility Solutions LLC* (DNRC Final Order 2007)(permit granted), *affirmed*, Montana River Action Network et al. v. DNRC et al., Cause No. CDV-2007-602, Montana First Judicial District (2008); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30023457 by Utility Solutions LLC* (DNRC Final Order 2007) (permit denied for failure to analyze legal availability outside of irrigation season (where mitigation applied)); *In the Matter of Application for Beneficial Water Use Permit No. 41H 30026244 by Utility Solutions LLC* (DNRC Final Order 2008); *In the Matter of Application for Beneficial Water Use Permit No. 76H-30028713 by Patricia Skergan and Jim Helmer* (DNRC Final Order 2009)(permit denied in part for failure to analyze legal availability for surface water depletion); Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 5 (Court affirmed denial of permit in part for failure to prove legal availability of stream depletion to slough and Beaverhead River); Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pgs. 11-12 (“DNRC properly determined that Wesmont cannot be authorized to divert, either directly or indirectly, 205.09 acre-feet from the Bitterroot River without establishing that the water does not belong to a senior appropriator”; applicant failed to analyze legal availability of surface water where projected surface water depletion from groundwater pumping); *In the Matter of Application for Beneficial Water Use Permit No. 76D-30045578 by GBCI Other Real Estate, LLC* (DNRC Final Order 2011) (in an open basin, applicant for a new water right can show legal availability by using a mitigation/aquifer recharge plan or by showing that any depletion to surface water by groundwater pumping will not take water already appropriated; development next to Lake Koocanusa will not take previously appropriated water). Applicant may use water right claims of potentially affected appropriators as a substitute for “historic beneficial use” in analyzing legal availability of surface water under § 85-2-360(5), MCA. Royston, *supra*.

31. A flow of water on a given date does not show that water is legally available without showing that all prior appropriators were diverting all claimed water at that moment. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pgs. 5-6. A flow of water past a point on a particular date or dates does not demonstrate that water is legally available. Id.

32. In analyzing legal availability for surface water, applicant was required to evaluate legal demands on the source of supply throughout the “area of potential impact” by the proposed use under §85-2-311(1)(a)(ii), MCA, not just within the “zone of influence.” Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 6.

33. *In the Matter of Beneficial Water Use Permit No. 62935-s76LJ by Crop Hail Management* (DNRC Final Order 1991)(Applicant showed water physically available for appropriation by producing evidence based on upstream diversions; however, he failed to show water legally available with information of downstream uses).

34. Applicant has proven by a preponderance of the evidence that water can reasonably be considered legally available during the period in which the applicant seeks to appropriate, in the amount requested, based on the records of the Department and other evidence provided to the Department. § 85-2-311(1)(a)(ii), MCA. (FOF’s 21-26).

Adverse Effect

FINDINGS OF FACT

35. *Groundwater* - Applicant’s proposed appropriation of groundwater from the Kootenai Formation is 150 gallons per minute (gpm) up to 207.7 AF. Analysis by Department groundwater hydrologist Attila Fohnagy indicates there are 5 groundwater rights (groundwater wells) that withdraw water from the Kootenai Formation within the zone-of-influence. The total volume of water associated with the 5 rights is 146.04 AF. By comparison, the estimated flux through the ZOI is 366.3 AF, leaving a volume in excess of demand of about 220 AF (more than the proposed appropriation). Fohnagy conducted analysis (forward modeling) to estimate drawdown in the 5 wells due to pumping of the proposed production wells over a five-year

period. That analysis showed some drawdown in four of the five wells, but the available water column left in each well still exceeds 2,900 feet. The Department finds there will be no adverse effects to other groundwater rights. Aquifer Test Report; Technical Report.

36. *Surface Water* - The aquifer Applicant is proposing appropriation from is hydraulically connected to the Judith River below its confluence with Wolf Creek. At such time depletion effects are realized, Fohnagy calculates the depletion to be a constant 116 GPM.

37. The Judith River has been measured near its confluence with the Missouri River since the year 2000. The following table represents the calculated median of the mean monthly discharge of the Judith River, in flow rate and volume, at its confluence with Wolf Creek, based on gaged data and water right records.

TABLE 2: ESTIMATED MEDIAN OF THE MEAN MONTHLY DISCHARGE OF THE JUDITH RIVER AT ITS CONFLUENCE WITH WOLF CREEK IN CUBIC FEET PER SECOND (CFS) AND ACRE-FEET (18 YEARS OF RECORD).

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
251.3	257.3	473.0	465.7	767.1	835.1	367.8	317.8	363.1	345.0	263.3	235.4
15452	14798	29081	27664	47167	49692	22615	19541	21606	21211	15665	14472

- The first row displays flow rate in CFS, and the second row displays volume in AF.

38. Table 1 in Finding of Fact No. 26 indicates that the physical water supply in the Judith River exceeds legal demands in all months (median of the mean basis), in both flow rate and volume. The Department, therefore, finds that an additional depletion of 116 GPM will not adversely affect the water rights and reservations of prior surface water appropriators.

CONCLUSIONS OF LAW

39. Pursuant to § 85-2-311(1)(b), MCA, the Applicant bears the affirmative burden of proving by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. Analysis of adverse effect must be determined based on a consideration of an applicant's plan for the exercise of the permit that demonstrates that the applicant's use of the water will be controlled so the water right of a prior appropriator will be satisfied. See Montana Power Co.

(1984), 211 Mont. 91, 685 P.2d 336 (purpose of the Water Use Act is to protect senior appropriators from encroachment by junior users); Bostwick Properties, Inc. ¶ 21.

40. An applicant must analyze the full area of potential impact under the § 85-2-311, MCA criteria. *In the Matter of Beneficial Water Use Permit No. 76N-30010429 by Thompson River Lumber Company* (DNRC Final Order 2006). While § 85-2-361, MCA, limits the boundaries expressly required for compliance with the hydrogeologic assessment requirement, an applicant is required to analyze the full area of potential impact for adverse effect in addition to the requirement of a hydrogeologic assessment. Id. ARM 36.12.120(5).

41. Applicant must prove that no prior appropriator will be adversely affected, not just the objectors. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 4.

42. In analyzing adverse effect to other appropriators, an applicant may use the water rights claims of potentially affected appropriators as evidence of their “historic beneficial use.” See Matter of Application for Change of Appropriation Water Rights Nos. 101960-41S and 101967-41S by Royston (1991), 249 Mont. 425, 816 P.2d 1054.

43. It is the applicant’s burden to produce the required evidence. E.g., Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 7 (legislature has placed the burden of proof squarely on the applicant); *In the Matter of Application to Change Water Right No. 41H 1223599 by MGRR #1, LLC.*, (DNRC Final Order 2005). (DNRC Final Order 2005). The Department is required to grant a permit only if the § 85-2-311, MCA, criteria are proven by the applicant by a preponderance of the evidence. Bostwick Properties, Inc. ¶ 21.

44. Section 85-2-311 (1)(b) of the Water Use Act does not contemplate a de minimis level of adverse effect on prior appropriators. Wesmont Developers v. DNRC, CDV-2009-823, First Judicial District Court, *Memorandum and Order*, (2011) Pg. 8.

45. District Court, *Memorandum and Order*, (2011) Pgs. 11 (Court rejected applicant’s argument that net depletion of .15 millimeters in the level of the Bitterroot River could not be adverse effect.); Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order*

Affirming DNRC Decision, (2011) Pgs. 3-4 (Court rejected applicant's arguments that its net depletion (3 and 9 gpm, respectively to Black Slough and Beaverhead River) was "not an adverse effect because it's not measureable," and that the depletion "won't change how things are administered on the source.").

After calculating the projected depletion for the irrigation season, the District Court in Sitz Ranch v. DNRC explained:

Section 85-2-363(3)(d) MCA requires analysis whether net depletion will adversely affect prior appropriators. Many appropriators are those who use surface water. Thus, surface water must be analyzed to determine if there is a net depletion to that resource. Sitz's own evidence demonstrates that about 8 acre feet of water will be consumed each irrigation season. Both Sitz and any other irrigator would claim harm if a third party were allowed to remove 8 acre feet of water each season from the source upon which they rely.

46. The Applicant has proven by a preponderance of the evidence that the water rights of a prior appropriator under an existing water right, a certificate, a permit, or a state water reservation will not be adversely affected. § 85-2-311(1)(b) , MCA. (FOF's 35-38)

Adequate Diversion

FINDINGS OF FACT

47. Water will be appropriated via two groundwater wells, drilled into the Second and Third Cat Creek Members of the Kootenai Formation, at depths of 3,041 feet (new well) and 2880 feet (existing well). The Kootenai Formation is one of the most productive and widespread aquifers in the Judith Basin. Both wells flow under artesian pressure, with the new well having a shut-in pressure of 73 pounds per square inch (PSI), and the existing well having a shut-in pressure of 55 PSI. The proposed appropriation includes a combined flow rate of 150 GPM, and a volume of 207.7 AF. Application.

48. A 37-hour aquifer test was conducted on the 3,041-foot deep well in 2017 at an average pumping rate of 90 GPM. The maximum drawdown of the well did not extend below the top of casing. The second well is an existing well that was drilled in 2000. It was pump tested in 2000 by the driller at a rate of 80 GPM for 10 hours. No change in pressure during the test was

recorded by the driller, however, the pressure has dropped somewhat over the years to roughly 55 PSI. Along with a drop of pressure, the flow rate has dropped to 60 GPM. Both wells were drilled by licensed water well contractors in the State of Montana. File.

49. The two groundwater wells will be connected to two manifold control structures, which will distribute water to a 77.7 AF-capacity storage reservoir and multiple places of use. A secondary pumping system will divert water from the storage reservoir to a center pivot irrigation system. The file contains numerous maps showing wells, pipelines (including sizes), manifold locations, storage reservoir, places and purposes of use. Pivot design specifications are provided in the file. File.

50. The Department finds the proposed means of diversion, construction and operation of the appropriation works to be adequate.

CONCLUSIONS OF LAW

51. Pursuant to § 85-2-311(1)(c), MCA, an Applicant must demonstrate that the proposed means of diversion, construction, and operation of the appropriation works are adequate.

52. The adequate means of diversion statutory test merely codifies and encapsulates the case law notion of appropriation to the effect that the means of diversion must be reasonably effective, i.e., must not result in a waste of the resource. *In the Matter of Application for Beneficial Water Use Permit No. 33983s41Q by Hoyt* (DNRC Final Order 1981); § 85-2-312(1)(a), MCA.

53. Water wells must be constructed according to the laws, rules and standards of the Board of Water Well contractors to prevent contamination of the aquifer. *In the Matter of Application for Beneficial Water Use Permit No. 41I-105511 by Flying J Inc.* (DNRC Final Order 1999).

54. Applicant has proven by a preponderance of the evidence that the proposed means of diversion, construction, and operation of the appropriation works are adequate for the proposed beneficial use. § 85-2-311(1)(c), MCA (FOF's 47-50).

Beneficial Use

FINDINGS OF FACT

55. The Applicants propose to divert groundwater from the Second and Third Cat Creek Members of the Kootenai Formation, by means of two wells, from January 1 through December 31, at a combined flow rate of 150 gallons per minute (GPM) and a volume up to 207.7 acre-feet (AF). The purposes of use include Irrigation of 100.5 acres; Multiple Domestic for four households; Lawn and Garden irrigation for the four households (6 acres total); and Stockwater (19 stock tanks serving 623 animal units). The places of use encompass Sections 1, 11, 13 and 14, T 20N, R16E, and Sections 25 and 35, T21N, R16E, all in Fergus County. Water for irrigation purposes will be stored in a pit with a capacity of 77.7 AF, located in the N2S2 Section 14, T20N, R16E. The surface area of the pit will be a maximum of 5 acres, with a depth of 20 feet (3:1 side slopes). Its capacity was determined based on the need to store sufficient water to meet irrigation scheduling throughout the season. Application.

56. The flow rate is based on the combined capacity of the two groundwater wells. The volume is based on water use standards outlined in administrative rules for domestic, lawn/garden and stock purposes, and guidelines from the Montana Extension Service for irrigation purposes. The guideline used for irrigation is roughly commensurate with Irrigation Water Requirement calculations outlined in ARM 36.12.1902(16). The proposed volume for each purpose and basis for volume follows. Application.

- Multiple Domestic (4 households) = **4.0 AF** (1.0 AF/each). Based on ARM 36.12.115(2)(a).
- Lawn and Garden (6 acres total) = **15.0 AF**. Based on ARM 36.12.115(2)(b).
- Stock (up to 648 animal units for a portion of the year) = **7.5 AF**. Based on ARM 36.12.115(2)(c).¹

¹ Stock volume was based on detailed scheduling of 648 AU's. This volume includes 525 AU's for 8 months of the year (October 1 through April 30), 275 AU's from May 1 through May 14, and 50 AU's from May 15 through May 31. The guideline of 15 gpd/AU was used, per ARM 36.12.115(2)(c), to calculate volume.

- Irrigation (100.5 acres of irrigation plus evaporation/seepage) = 170.3 AF + 10.9 AF = **181.2 AF.**²

57. The Department finds the volume for each purpose to be a beneficial use of water.

CONCLUSIONS OF LAW

58. Under § 85-2-311(1)(d), MCA, an Applicant must prove by a preponderance of the evidence the proposed use is a beneficial use.

59. An appropriator may appropriate water only for a beneficial use. See also, § 85-2-301 MCA. It is a fundamental premise of Montana water law that beneficial use is the basis, measure, and limit of the use. E.g., McDonald, supra; Toohey v. Campbell (1900), 24 Mont. 13, 60 P. 396. The amount of water under a water right is limited to the amount of water necessary to sustain the beneficial use. E.g., Bitterroot River Protective Association v. Siebel, Order on Petition for Judicial Review, Cause No. BDV-2002-519, Montana First Judicial District Court, Lewis and Clark County (2003), *affirmed on other grounds*, 2005 MT 60, 326 Mont. 241, 108 P.3d 518; *In The Matter Of Application For Beneficial Water Use Permit No. 43C 30007297 by Dee Deaterly* (DNRC Final Order), *affirmed other grounds, Dee Deaterly v. DNRC et al*, Cause No. 2007-186, Montana First Judicial District, *Order Nunc Pro Tunc on Petition for Judicial Review* (2009); Worden v. Alexander (1939), 108 Mont. 208, 90 P.2d 160; Allen v. Petrick (1924), 69 Mont. 373, 222 P. 451; *In the Matter of Application for Beneficial Water Use Permit No. 41S-105823 by French* (DNRC Final Order 2000).

Amount of water to be diverted must be shown precisely. Sitz Ranch v. DNRC, DV-10-13390, Fifth Judicial District Court, *Order Affirming DNRC Decision*, (2011) Pg. 3 (citing BRPA v. Siebel, 2005 MT 60, and rejecting applicant's argument that it be allowed to appropriate 800 acre-feet when a typical year would require 200-300 acre-feet).

² Irrigation consists of 90.5 acres of alfalfa (center pivot system) and 10 acres of hops (drip irrigation system). Applicant referenced guidelines and publications by the Montana Extension Service in calculating a total volume of 164.4 AF for center pivot irrigation, and 5.9 AF for drip irrigation, for a combined volume of 170.3 AF. Additionally, evaporation was estimated using the Potts method outlined in ARM 36.12.116(1)(b), and 5% of the storage capacity was assumed to be lost to seepage. DNRC Regional Office Civil Engineering Specialist Sterling Sundheim reviewed the seepage estimation, and based on his 39 years of working with stock ponds and water rights, believes the number to be reasonable, and likely a minimum estimation. The combined volume estimated for evaporation and seepage is 10.9 AF.

60. Applicant proposes to use water for Multiple Domestic, Lawn and Garden, Stock and Irrigation purposes, which are recognized beneficial uses. § 85-2-102(4), MCA. Applicant has proven by a preponderance of the evidence each proposed purpose is a beneficial use and that 207.7 AF of diverted volume and a flow rate of 150 GPM is the amount needed to sustain the beneficial use. § 85-2-311(1)(d), MCA, (FOF's 55-57)

Possessory Interest

FINDINGS OF FACT

61. The applicant signed and had the affidavit on the application form notarized affirming the applicant has possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use.

CONCLUSIONS OF LAW

62. Pursuant to § 85-2-311(1)(e), MCA, an Applicant must prove by a preponderance of the evidence that it has a possessory interest or the written consent of the person with the possessory interest in the property where the water is to be put to beneficial use, or if the proposed use has a point of diversion, conveyance, or place of use on national forest system lands, the applicant has any written special use authorization required by federal law to occupy, use, or traverse national forest system lands for the purpose of diversion, impoundment, storage, transportation, withdrawal, use, or distribution of water under the permit.

63. Pursuant to ARM 36.12.1802:

(1) An applicant or a representative shall sign the application affidavit to affirm the following:

(a) the statements on the application and all information submitted with the application are true and correct and

(b) except in cases of an instream flow application, or where the application is for sale, rental, distribution, or is a municipal use, or in any other context in which water is being supplied to another and it is clear that the ultimate user will not accept the supply without consenting to the use of water on the user's place of use, the applicant has possessory interest in the property where the water is to be put to beneficial use or has the written consent of the person having the possessory interest.

(2) If a representative of the applicant signs the application form affidavit, the representative shall state the relationship of the representative to the applicant on the form,

such as president of the corporation, and provide documentation that establishes the authority of the representative to sign the application, such as a copy of a power of attorney.

(3) The department may require a copy of the written consent of the person having the possessory interest.

64. Applicants have proven by a preponderance of the evidence that it has a possessory interest, or the written consent of the person with the possessory interest, in the property where the water is to be put to beneficial use. § 85-2-311(1)(e), MCA. (FOF 61)

PRELIMINARY DETERMINATION

Subject to the terms, analysis, and conditions in this Order, the Department preliminarily determines that this Application for Beneficial Water Use Permit No. 41S 30114604 should be GRANTED.

The Department determines the Applicants may divert groundwater from the Kootenai Formation by means of two wells (3,041 feet deep and 2,880 feet deep) from January 1 through December 31, at 150 GPM up to 207.7 AF, from points in the NESENE Section 14 and SENESW Section 14, both in T20N, R16E. The purposes of use and period of use are as follows: Multiple Domestic for four households (1/1-12/31), Lawn and Garden irrigation of 6.0 acres (4/1-10/31), Stock water use for 633 animal units (1/1-12/31) and Irrigation of 100.5 acres (4/15-10/15). The places of use encompass Sections 1, 11, 13 and 14, T 20N, R16E, and Sections 25 and 35, T21N, R16E, all in Fergus County (see map in file). Water for irrigation purposes may be stored in a pit with a capacity of 77.7 AF, located in the N2S2 Section 14, T20N, R16E.

NOTICE

This Department will provide public notice of this Application and the Department's Preliminary Determination to Grant pursuant to §§ 85-2-307, MCA. The Department will set a deadline for objections to this Application pursuant to §§ 85-2-307, and -308, MCA. If this Application receives no valid objection or all valid objections are unconditionally withdrawn, the

Department will grant this Application as herein approved. If this Application receives a valid objection, the application and objection will proceed to a contested case proceeding pursuant to Title 2 Chapter 4 Part 6, MCA, and § 85-2-309, MCA. If valid objections to an application are received and withdrawn with stipulated conditions and the department preliminarily determined to grant the permit or change in appropriation right, the department will grant the permit or change subject to conditions necessary to satisfy applicable criteria.

DATED this 3rd day of July 2018.

Scott Irvin, Regional Manager
Lewistown Water Resources Regional Office
Department of Natural Resources and Conservation

CERTIFICATE OF SERVICE

This certifies that a true and correct copy of the PRELIMINARY DETERMINATION TO GRANT was served upon all parties listed below on this 3rd day of July 2018, by first class United States mail.

DAN AND LAURA BOYCE
PO BOX 66
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TERESA OLSON
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NAME

DATE